

CLAIMS

- Sub A2
1. A lead frame for semiconductor devices comprising:
a frame; and
a mold having at least one air vent from which the resin can seep out of during the injecting phase into said mold, said air vent being positioned between an upper and a lower surface of said frame, wherein said frame includes: a through hole placed at the outlet of said air vent so that when the resin has solidified it forms a flash which is in coherence with one of the upper and lower surfaces of said frame.
 2. The lead-frame according to claim 1 wherein said through hole has an ellipsoidal section having its center positioned on the axis of said air vent and has the minor diameter dimension of said hole shorter than the diameter of said air vent.
 3. The lead-frame according to claim 1 wherein said through hole has a circular section with its center positioned on the axis of said air vent and has the dimension of its diameter equal to or shorter than that of said air vent.
 4. The lead-frame according to claim 2 wherein said air vent by means of said hole having an ellipsoidal section gives rise to a flash of resin on the upper surface of said frame and to a flash of resin on the lower surface of said frame, with an overall thickness equal to or exceeding 1 mm.
 5. The lead-frame according to claim 2 wherein said hole with ellipsoidal section is positioned at a distance of more than 1 mm from said air vent.
 6. The lead-frame according to claim 3 wherein said air vent by means of said hole of circular section gives rise to a flash only on the upper surface of said frame, the flash having a thickness ranging between 20-25 μm .

7. The lead-frame according to claim 3 wherein said hole of circular section is positioned at a distance of more than 1 mm from said air vent.

8. An integrated circuit, comprising:
a semiconductor device;
a molded portion formed around the semiconductor device and having a flashing portion of molded material extruded from the molded portion at a peripheral area thereof; and
a lead-frame external to the molded portion and having a receptacle adjacent to the peripheral area of the molded portion having the flashing portion extruded therefrom, the flashing portion at least partially filling the receptacle.

9. The integrated circuit package of claim 8 wherein the receptacle is formed on an axis passing through the flashing portion.

10. The integrated circuit package of claim 9 wherein the receptacle is a hole through the lead-frame.

11. The integrated circuit package of claim 10 wherein the flashing portion at least partially filling the receptacle includes a first portion formed on a first surface of the lead-frame facing away from the molded portion and a second portion formed on a second surface of the lead-frame facing toward the molded portion.

12. The integrated circuit package of claim 9 wherein the receptacle is a recess formed in the lead-frame

13. The integrated circuit package of claim 9 wherein the receptacle is substantially round in shape.

14. The integrated circuit package of claim 9 wherein the receptacle is substantially elliptical in shape.

15. The integrated circuit package of claim 14 wherein the receptacle is spaced a predetermined distance away from the extrusion of the flashing portion from the molded portion.

16. A semiconductor lead-frame for an integrated circuit having a molded portion formed thereover, the molded portion having one or more flashing portions formed at peripheral extrusion areas thereof, the lead-frame comprising:

a conductive skeleton having a support surface and a plurality of conductive strips extending upwardly from the surface, the conductive strips defining an air vent zone of the surface that is structured for placement adjacent to one of the peripheral extrusion areas, the air vent zone including a receptacle in the surface for receiving a portion of one of the flashing portions.

17. The lead-frame of claim 16 wherein the receptacle is a recess formed in a surface of the conductive strip facing away from the molded portion.

18. The lead-frame of claim 16 wherein the receptacle is aligned with the flashing portion.

19. The lead-frame of claim 16 wherein the receptacle is a passage through the conductive strip.

20. The lead-frame of claim 19 wherein the receptacle is substantially circular in shape.

21. The lead-frame of claim 19 wherein the receptacle is substantially ellipsoidal in shape.

22. The lead-frame of claim 16 wherein the receptacle is spaced a predetermined distance away from the peripheral extrusion area.

23. The lead-frame of claim 16, further comprising:
a semiconductor device mounted on the support surface of the conductive skeleton; and

a molded portion formed over the semiconductor device, the molded portion having one or more flashing portions formed at a peripheral extrusion area thereof and extending into the receptacle.

24. The lead-frame of claim 23 wherein a flashing portion extending between the peripheral extrusion area and the receptacle extends across a surface of the conductive strip facing away from the molded portion.

25. The lead-frame of claim 24 wherein:
the receptacle is a passage through the conductive strip; and
the flashing portion extends through the passage.

26. The lead-frame of claim 25 wherein the flashing portion forms a button portion on a surface of the conductive strip facing toward the molded portion.